

What is claimed is:

1        1. A wireless system for data communicating cashless vending transaction data and  
2        vending machine audit data to remote locations comprising:

3  
4            a vending machine controller interconnected with a vending machine, said  
5            vending machine controller having a plurality of peripheral device  
6            interfaces;

7  
8            a VIU interconnected with at least one of said plurality of peripheral  
9            device interfaces, said VIU having a first transceiver; and

10  
11           a base unit, said base unit having a second transceiver wherein, said first  
12           transceiver and said second transceiver wirelessly data communicate, said  
13           base unit having a communication interface for data communicating with a  
14           remote location;

15  
16        wherein said VIU data communicates wirelessly with said remote location by way of said  
17        base unit.

18  
1        2. The wireless system in accordance with claim 1 wherein, said first transceiver is at  
2        least one of the following types of transceiver: 430Mhz single channel transceiver,  
3        430Mhz dual channel transceiver, 430Mhz spread spectrum transceiver, 900Mhz single  
4        channel transceiver, 900Mhz dual channel transceiver, 900Mhz spread spectrum  
5        transceiver, 2.4Ghz single channel transceiver, 2.4Ghz dual channel transceiver, or  
6        2.4Ghz spread spectrum transceiver.

7

1 3. The wireless system in accordance with claim 1 wherein, said second transceiver is at  
2 least one of the following: 430Mhz single channel transceiver, 430Mhz dual channel  
3 transceiver, 430Mhz spread spectrum transceiver, 900Mhz single channel transceiver,  
4 900Mhz dual channel transceiver, 900Mhz spread spectrum transceiver, 2.4Ghz single  
5 channel transceiver, 2.4Ghz dual channel transceiver, or 2.4Ghz spread spectrum  
6 transceiver.

1 4. The wireless system in accordance with claim 1 wherein, at least one of the following  
2 communicates half duplex: said first transceiver, or said second transceiver.

1 5. The wireless system in accordance with claim 1 wherein, at least one of the following  
2 communicates full duplex: said first transceiver, or said second transceiver.

1 6. The wireless system in accordance with claim 1 wherein, said remote location is at  
2 least one of the following: a credit bureau, a network center, a global network based data  
3 processing resource, or USALIVE.

1 7. The wireless system in accordance with claim 1 wherein, said communication interface  
2 is at least one of the following: a modem interface, a network connection, an interactive  
3 interface, a serial interface, or a wireless interface.

1 8. The wireless system in accordance with claim 7 wherein, said wireless interface is an  
2 interface to at least one of the following wireless devices: PCS network data modem,  
3 cellular network data modem, CDPD modem, CDMA modem, 2G wireless modem, 3G  
4 wireless modem, or RIM data modem.

1 9. The wireless system in accordance with claim 7 wherein, said wireless interface is a  
2 local area network connection.

3

1 10. The wireless system in accordance with claim 7 wherein, said wireless interface is a  
2 wide area network connection.

3

1 11. The wireless system in accordance with claim 1 wherein, more than one of said VIU  
2 data communicates with said base unit.

3

1 12. The wireless system in accordance with claim 1 wherein, said VIU wirelessly  
2 programs said base unit.

3

1 13. The wireless system in accordance with claim 1 wherein, said VIU wirelessly  
2 programs the baud rate of said communication interface to match the baud rate of said  
3 remote location.

4

1 14. The wireless system in accordance with claim 1 wherein, said peripheral device  
2 interface is at least one of the following: a multi-drop-bus interface, a coin acceptor  
3 interface, a bill acceptor interface, a serial interface, or a data exchange interface.

4

1 15. The wireless system in accordance with claim 1 wherein, said base unit is a wall  
2 mount unit.

3

1 16. The wireless system in accordance with claim 1 wherein, data communication  
2 between said base unit and said remote location is effectuated with a phone line.

3

1 17. The wireless system in accordance with claim 1 wherein, data communication  
2 between said base unit and said remote location is effectuated with a network connection.

3

"SECRET"

1 18. The wireless system in accordance with claim 1 wherein, data communication  
2 between said VIU and said base unit is encrypted.  
3

1 19. The wireless system in accordance with claim 1 wherein, data communication  
2 between said VIU and said base unit is encrypted and data communication between said  
3 base unit and said remote location is unencrypted.  
4

1 20. The wireless system in accordance with claim 1 wherein, a plurality of wireless  
2 packets data communicated from said VIU are received at said base unit and  
3 communicated to said remote location without packet level error checking at said base  
4 unit, said remote location assembles said plurality of wireless packets into a data  
5 message, said remote location error checks said data message, said remote location  
6 communicates an acknowledge or not-acknowledge, based on error check results of said  
7 data message, to said VIU by way of said base unit.  
8

1 21. The wireless system in accordance with claim 1 wherein, cashless transaction data  
2 and vending machine audit data is selectively data communicated to said remote location  
3 when said remote location is at least one of the following: a network center, a global  
4 network based data processing resource, or USALIVE; and cashless transaction data is  
5 selectively data communicated to said remote location when said remote location is a  
6 credit bureau.  
7

1 22. A wireless system for data communicating cashless vending transaction data and  
2 vending machine audit data to remote locations comprising:  
3

4 a vending machine controller interconnected with a vending machine, said  
5 vending machine controller having a plurality of peripheral device  
6 interfaces, said plurality of peripheral device interfaces include at least one

of the following types of interfaces: a multi-drop-bus interface, or a data exchange interface;

a VIU interconnected with at least one of said plurality of peripheral device interfaces, said VIU having a first transceiver; and

a base unit, said base unit having a second transceiver wherein, said first transceiver and said second transceiver wirelessly data communicate, said base unit having a modem, said modem being connected to a phone line for data communicating with a remote location;

wherein said VIU data communicates wirelessly with said remote location by way of said base unit.

23. The wireless system in accordance with claim 22 wherein, said first transceiver is at least one of the following types of transceiver: 430Mhz single channel transceiver, 430Mhz dual channel transceiver, 430Mhz spread spectrum transceiver, 900Mhz single channel transceiver, 900Mhz dual channel transceiver, 900Mhz spread spectrum transceiver, 2.4Ghz single channel transceiver, 2.4Ghz dual channel transceiver, or 2.4Ghz spread spectrum transceiver.

24. The wireless system in accordance with claim 22 wherein, said second transceiver is at least one of the following: 430Mhz single channel transceiver, 430Mhz dual channel transceiver, 430Mhz spread spectrum transceiver, 900Mhz single channel transceiver, 900Mhz dual channel transceiver, 900Mhz spread spectrum transceiver, 2.4Ghz single channel transceiver, 2.4Ghz dual channel transceiver, or 2.4Ghz spread spectrum transceiver.

1 25. The wireless system in accordance with claim 22 wherein, said VIU wirelessly  
2 programs the baud rate of said modem to match the baud rate of said remote location.  
3

1 26. The wireless system in accordance with claim 22 wherein, cashless transaction data  
2 and vending machine audit data is selectively data communicated to said remote location  
3 when said remote location is at least one of the following: a network center, a global  
4 network based data processing resource, or USALIVE; and cashless transaction data is  
5 selectively data communicated to said remote location when said remote location is a  
6 credit bureau.  
7

1 27. A method of wirelessly data communicating cashless transaction data, and vending  
2 machine audit data to remote locations comprising the steps of:  
3

- 4 a) determining at a VIU the availability of a base unit for data communication,  
5 said VIU being installed in a vending machine, said vending machine having a  
6 vending machine controller, said vending machine controller having a  
7 plurality of peripheral device interfaces, said VIU being interconnected to said  
8 plurality of peripheral device interfaces, said base unit having a  
9 communication interface;
- 10 b) communicating wirelessly data between said VIU and said base unit to  
11 determine if said communication interface is in use;
- 12 c) receiving wirelessly at said base unit a first plurality of data from said VIU;
- 13 d) passing received said first plurality of data to said remote location;
- 14 e) receiving at said base unit a second plurality of data from said remote  
15 location;
- 16 f) passing wirelessly received said second plurality of data to said VIU; and  
17 g) terminating communication.  
18

1 28. The method of wirelessly data communicating in accordance with claim 27 further  
2 comprises the step of:

- 3  
4 a) programming selectively said base unit operating characteristics by way of  
5 wireless data communication between said VIU and said base unit, wherein  
6 said VIU remotely configures said base unit.  
7

1 29. The method of wirelessly data communicating in accordance with claim 27 wherein,  
2 the step of determining at a VIU the availability of a base unit for data communication  
3 further comprises the steps of:

- 4  
5 a) listening at said VIU for a status packet wirelessly data communicated from  
6 said base unit indicating the current state of said base unit; and  
7 b) broadcasting wirelessly from said VIU a wake-up command, when said status  
8 packet is not received at said VIU wherein, said wake-up command when  
9 received by said base unit initiates the transmission of said status packet.  
10

1 30. The method of wirelessly data communicating in accordance with claim 29 wherein,  
2 said status packet includes said base unit state conditions indicating at least one of the  
3 following: base unit is available, base unit is busy, a packet counter, or a polling signal.  
4

1 31. The method of wirelessly data communicating in accordance with claim 27 wherein,  
2 said plurality of peripheral device interfaces is at least one of the following: a multi-drop-  
3 bus interface, a coin acceptor interface, a bill acceptor interface, a serial interface, or a  
4 data exchange interface.  
5

1 32. The method of wirelessly data communicating in accordance with claim 28 wherein,  
2 the step of programming selectively said base unit operating characteristics include said

VIU wirelessly programming the baud rate of said communication interface to match the baud rate of said remote location.

33. The method of wirelessly data communicating in accordance with claim 27 wherein, said communication interface is at least one of the following: a modem interface, a network connection, an interactive interface, a serial interface, or a wireless interface.

34. The method of wirelessly data communicating in accordance with claim 33 wherein, said wireless interface is an interface to at least one of the following wireless devices: PCS network data modem, wireless modem, cellular network data modem, CDPD modem, CDMA modem, 2G type wireless modem, 3G type wireless modem, or RIM data modem.

35. The method of wirelessly data communicating in accordance with claim 27 wherein, said remote location is at least one of the following: a credit bureau, a network center, a global network based data processing resource, or USALIVE.

36. The method of wirelessly data communicating in accordance with claim 27 wherein, data communication between said base unit and a network of a plurality of said VIU are managed by way of each of said VIU listening to a status packet transmitted from said base unit to determine the availability and current state of said base unit prior to initiating data communication with said base unit.

37. The method of wirelessly data communicating in accordance with claim 27 wherein, the step of terminating communication includes terminating communication between said base unit and said remote location at the request of at least one of the following: said VIU, said base unit, or said remote location.



1 38. The method of wirelessly data communicating in accordance with claim 27 wherein,  
2 steps 'c', 'd', 'e', and 'f' repeat until at least one of the following data processing devices  
3 data communicates a terminate message: said VIU, said base unit, or said remote  
4 location.

1 39. The method of wirelessly data communicating in accordance with claim 27 wherein,  
2 said first plurality of data is at least one of the following: said vending machine DEX  
3 data, said vending machine MDB data.

1 40. The method of wirelessly data communicating in accordance with claim 27 wherein,  
2 said first plurality of data is cashless vending transaction data.

1 41. The method of wirelessly data communicating in accordance with claim 27 wherein,  
2 said second plurality of data is said VIU configuration data.